

IDOE Executive Summary of Advanced Placement Research

College Outcomes Comparisons by AP and Non-AP High School Experiences. Hargrove, L., Godin, D., & Dodd, B. (2008) (College Board Research Report No. 2008-3). New York: The College Board.

The study compared students that took: (1) AP course and exam, (2) AP course only, (3) AP Exam only, (4) Dual Enrollment, (5) Other courses groups. The students were matched on ability (SAT scores) and SES (as measured by free or reduced price lunch status). They found that AP course and exam students that averaged a “2” or above on AP exams had significantly higher four-year graduation rates than students in the other four groups. The AP course and exam group also significantly outperformed all other groups in college GPA and credits earned.”

A Little Now for a Lot Later: A Look at a Texas Advanced Placement Incentive Program. Jackson, Kirabo, C. (2007). Cornell University. Published in the Journal of Human Resources, New York Times, Wall Street Journal, Washington Post, Globe and Mail, Christian Science Monitor and USA Today.

The Advanced Placement Incentive Program is associated with increases in the number of high-school graduates who score above 1100/24 on the SAT/ACT examinations by about 30%, and the number of students who matriculate in college by about 8% after two years of adopting the program. The improvements in SAT/ACT performance are likely the result of increased exposure to rigorous material.

The body of evidence is consistent with explanations put forth by guidance counselors such as changes in peer norms, teacher norms, increased emphasis on AP courses, and information on the benefits to taking AP courses. The findings are suggestive of some of reasons we observe suboptimal educational choices in low-income, low-performing schools. The fact that the AP exam participation response was much larger (on the extensive margin) for black and Hispanic students suggests that they had low initial participation rates because (a) peer norms did not promote taking AP courses, (b) students from these populations were less likely to have good information on how to negotiate the college application process, (c) student expectations of likelihood of success may have been low due to sub-optimal teacher encouragement.

The relationship between Advanced Placement and college graduation. Dougherty, C., Mellor, L., & Jian, S. (2006). National Center for Educational Accountability: 2005 AP Study Series, Report 1. Austin, Texas: National Center for Educational Accountability.

The research found that students who earned a 3 or better on one or more AP Exams in core content areas were more likely to graduate from college in five years or less compared to non-AP students, even after controlling for prior academic achievement, free or reduced-price lunch status, percentage of low-income students and district dropout rate. Further, “the percent of a school’s students who take and pass AP exams is the best AP-related indicator of whether the school is preparing increasing percentages of its students to graduate from college. The importance of AP exam results indicates the need for schools and districts to pay close

attention not only to the quality of teaching in Advanced Placement courses but also to improving the academic preparation of students prior to their enrollment in those courses.”

AP Students in College: An Analysis of Five-Year Academic Careers. Morgan, Rick and John Klaric. (2007). Research Report No. 2007-4. The College Board: New York, NY.

After examining student transcript data from several universities they found that AP students scoring 3 or higher on exams in high school earned higher grades than non-AP students in college STEM courses, such as, Calculus and Biology. Additionally, traditionally underrepresented students majoring in STEM disciplines (females, African-American and Hispanic) were dramatically higher across all groups and concentrations for students taking AP as compared to those that did not in high school.

The role of Advanced Placement and honors courses in college admissions. Geiser, S., & Santelices, V. (2004). (Research & Occasional Paper Series No. CSHE 4.04). University of California, Berkeley.

The following variables were examined in their regression analysis: high school GPA, AP scores, SAT scores, SAT Subject Test scores, high school quality, and parental education. They found that “AP examination scores are among the very best predictors of college performance. The subject-specific, curriculum-intensive AP exams are the epitome of achievement tests, in this sense, and their validity in predicting college performance should not be surprising.”

Advanced Placement students in college: An investigation of course grades at 21 colleges. Morgan, R., & Ramist, L. (1998). (ETS Statistical Report No. 98-13). Princeton, NJ: Educational Testing Service.

The study examined 21 selective colleges and universities and found that “students who scored a 3 on the AB Calculus exam did better in Calculus II than the average student who has passed Calculus I taken at that university.”

How well do Advanced Placement students perform on the TIMSS Advanced Mathematics and Physics tests? Gonzalez, E. J., O’Connor, K. M., & Miles, J. (2001). The International Study Center: Boston College.

The researches administered the TIMSS Advanced Mathematics and Physics tests to students enrolled in AP Calculus and AP Physics courses. The performance of these AP students was then compared to the performance of students in 16 countries who took the same assessments. They found that:

- 1) Students enrolled in AP Calculus had the highest average performance on the TIMSS Advanced Mathematics test, significantly outperforming students in all other countries except France. AP students that took the AP exam and earned a grade of 3 or better outperformed students in all other countries on the TIMSS, including France.*

- 2) *Students enrolled in AP Physics courses scored significantly better than students in all other countries except Norway and Sweden. AP students that took the AP exam and earned a grade of 3 or better scored higher than students in all other countries on the TIMSS.*

An investigation of the validity of AP grades of 3 and a comparison of AP and non-AP student groups.
Dodd, B. G et al (2002). (College Board Research Report No. 2002-9). New York: The College Board.

“Results showed that AP students who were exempted from the introductory course in calculus, biology, and English earned the same or higher grades in the subsequent course, took as many or more class hours in the subject area, and had the same or higher grades in additional courses in the subject area compared to the group of non-AP students of similar academic ability.”

Answers in the tool box: Academic intensity, attendance patterns, and bachelor’s degree attainment.
Adelman, C. (1999). Washington, DC: U.S. Department of Education

He found that “the academic intensity of a student’s high school curriculum was highly predictive of college completion.” The number of AP courses taken by a student served as one of several variables that comprised his “academic curriculum intensity variable” which predicted college graduation.